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Curriculum Evaluation, Education Financing, and Career Plans of 1983 Medical School Graduates

Maria Thomae-Forgues, Thomas H. Dial, and Robert J. Boerner

Abstract—The Association of American Medical Colleges annually gathers data on curriculum evaluation, financing, and career plans from senior medical students through a graduation questionnaire. According to the 1983 survey, a majority of the seniors perceived that an appropriate amount of time was devoted to the various areas of instruction at their institutions. The average indebtedness of the graduates was reported to be increasing, and 84.4 percent reported having medical school debts. Only 13.2 percent of the graduates indicated plans to enter a career in research, although over one-third had some research involvement while in medical school. Those who participated in research activities during medical school were somewhat more likely to plan significant research involvement after graduation than those who were not involved in research in medical school.

Each year since 1978 the Association of American Medical Colleges (AAMC) has administered a graduation questionnaire to all U.S. senior medical students. The questionnaire has helped to provide a description of graduate medical education and career plans of senior medical students. It also has been used extensively in the evaluation of the medical school curriculum. The results of the survey are valuable to the nation's medical schools in planning program changes, to the AAMC in answering questions related to the medical school experience and future plans of medical students, and to other health policy planners in assessing the health manpower needs of the United States. The purpose of the authors of this paper is to present basic information on 1983 medical school graduates in the areas of education financing, curriculum evaluation, and career plans.

A total of 10,481 students (65.6 percent of all medical school seniors) responded to the 1983 survey. Except for a slight underrepresentation of minority group students, the respondents appear to be representative of U.S. senior medical students in general. Of the respondents, 26.9 percent were females, and 73.1 percent were males; 98.9 percent were U.S. citizens, 88.3 percent were white, and 5.6 percent came from underrepresented minority groups. Thirty-nine percent were married; 48.4 percent were single and had never married.

Ms. Thomae-Forgues is a human resources specialist at the Organization of American States, Washington, D.C. Mr. Dial is a research associate and Mr. Boerner is director, both in the Division of Student Programs, Association of American Medical Colleges (AAMC), Washington, D.C. Ms. Thomae-Forgues formerly was a research associate in the Division of Student Programs at the AAMC.

Experience and Curriculum

Most of the responding seniors (77.6 percent) entered medical school directly after graduation from college; 7.2 percent entered medical school before graduating from college. Only 7.8 percent of the seniors interrupted their medical school studies for reasons other than vacations; the most commonly cited category of reasons was "personal and family," cited by 37.9 percent of those students reporting an interruption.

The seniors were asked to indicate the educational activities in which they participated while in medical school. Table 1 presents the distribution of responses to this question. The most commonly reported activities were formal specialty training (51.4 percent of all respondents) and clinical electives sponsored by another medical school (45.4 percent).

Students were also asked to rate on a scale from 1 to 3, where 1 = inadequate, 2 = appropriate, and 3 = excessive, the amount of time devoted by their institution to various areas of instruction in the medical school curriculum. Table 2 presents the ratings given by the 1983 graduates. For most of the topics listed, the majority of those stating an opinion considered the amount of instruction appropriate. The most notable exceptions were research techniques, preventive care, nutrition, medical care cost control, and practice management skills. The amount of instruction in each of these five areas was rated inadequate by more than 50 percent of those expressing an opinion.

TABLE 1

Participation in U.S. Medical School Activities by 10,481 Seniors Responding to the 1983 AAMC Graduation Questionnaire

Activity	Respondents	
	No.	Percent
Ambulatory primary care clerkship at medical school	4,233	40.4
Authorship of research paper (sole or joint)	2,190	20.9
Elective sponsored by another medical school		
Basic science	167	1.6
Clinical	4,758	45.4
Formal specialty training (subinternship)	5,387	51.4
Independent study for credit	1,465	14.0
Investigator in research project	3,578	34.1
Organized peer review of medical practice	153	1.5
Paid employment for limited clinical services	2,308	22.0
Remote clinical educational experience		
Rural community	3,089	29.5
Inner-city community	1,424	13.6
Military or other government	863	8.2
Abroad	771	7.4
Total participating in at least one of above activities*	9,748	93.0

* Not all of the students responded to this question.

TABLE 2

Percentage and Mean Score of Seniors Responding to 1983 Questionnaire Item Concerning Amount of Instruction Offered in Various Areas of the Medical School Curriculum

Curriculum Area	Rating by Percent*			Mean Score†
	Excessive	Appropriate	Inadequate	
Basic medical sciences	19.9	74.0	6.1	2.1
Behavioral sciences	13.7	63.1	23.3	1.9
Care of ambulatory patients	1.1	63.5	35.3	1.7
Care of hospitalized patients	6.6	90.0	3.5	2.0
Care of the elderly	1.8	60.0	38.2	1.6
Clinical sciences	1.3	81.8	16.9	1.8
Diagnostic skills	1.3	70.1	28.6	1.7
Drug effects and clinical pharmacology	2.3	72.9	24.9	1.8
Management of patient's socioeconomic, educational, emotional problems	4.1	49.8	46.1	1.6
Medical care cost control	0.8	33.1	66.1	1.3
Medical record-keeping skills	2.2	57.6	40.1	1.6
Nutrition	1.2	38.5	60.3	1.4
Patient follow-up	0.7	55.2	44.1	1.6
Patient interviewing skills	6.0	83.1	11.0	1.9
Physician self-evaluation and independent learning skills	0.8	57.9	41.4	1.6
Practice management skills	0.5	30.3	69.2	1.3
Preventive care	1.6	38.2	60.2	1.4
Public health and community medicine	5.0	47.3	47.7	1.6
Research techniques	4.9	43.3	51.8	1.5
Teamwork with other health professionals	1.7	80.0	18.3	1.8
Therapeutic management	1.1	72.6	26.3	1.7

* Nonresponders to each part of the question were excluded from the computation of percentages for that part. The number of respondents ranged from 10,354 to 10,413.

† Based on a 3-point scale (1 = inadequate, 2 = appropriate, 3 = excessive).

In no instructional area was the amount of instruction rated excessive by a majority or plurality of those stating an opinion.

Financing

Because of substantial increases in tuition and decreases in the availability of financial assistance in recent years, most 1983 graduates were entering their residency training with a significant amount of educational debt. Although only 29.5 percent of the responding seniors reported being in debt for their premedical education, a majority (84.4 percent) reported having medical school debts. Some 22.3 percent of the students responding to the debt question had medical school debts of $30,000 or more. Table 3 presents the distribution of premedical, medical, and total indebtedness as reported by the 1983 respondents.

Fewer than half of the responding students (45.8 percent) reported having received a scholarship from any source for their medical education. Table 4 presents the sources of the scholarships for those students who indicated that they had received one.

TABLE 3

Percentage of Seniors Responding to 1983 Questionnaire Concerning Amount of Premedical, Medical, and Total Education Indebtedness

Amount of Debt†	Percent*		
	Premedical	Medical	Total
None	70.5	15.6	13.8
$1 to $4,999	20.2	3.0	3.5
$5,000 to $9,999	7.0	6.2	6.4
$10,000 to $14,999	1.3	9.9	9.5
$15,000 to $19,999	0.5	15.8	15.2
$20,000 to $24,999	0.3	17.4	16.6
$25,000 to $29,999	0.1	9.8	10.2
$30,000 to $49,999	0.1	18.4	20.0
$50,000 or more	0.0	3.9	4.7

* Nonresponders to each part of the question are excluded from the computation of percentages for that part. The number of respondents in each category was: premedical, 10,288; medical, 10,178; total, 10,073.

† The mean debts of the indebted respondents in the three categories were: premedical, $4,167; medical, $22,694; total, $23,647.

TABLE 4

Number and Percentage of 4,731 Responding Medical School Seniors Who Indicated Receiving Scholarships by Source, 1983*

Source	Respondents	
	No.	Percent
Armed forces	574	12.1
National Health Service Corps	749	15.8
State	824	17.4
School-awarded	2,290	48.4
Foundation	962	20.3
Local charitable organization	339	7.2
Other/no source specified	476	10.1

* Forty-one of these respondents received scholarships but did not indicate the source. A total of 5,608 students indicated that they had not received any scholarship, and 142 failed to respond to the question. "Other" sources of scholarships include, for example, local medical associations and the American Medical Women's Association. Percentages sum to more than 100 because some students received scholarships from multiple sources.

Among students with debts, those who had received scholarships had a higher mean medical school debt than those who reported that they had not received scholarships ($24,115 versus $21,435, respectively).

Of the students reporting debt, those attending private medical schools had average debts of $26,535, and those attending public medical schools had average debts of $20,249. There was little difference between the average indebtedness of male students ($22,619) and of female students ($23,001). The percentages of males and females reporting any premedical or medical school debt were also similar: 81.9 percent of the males versus 82.2 percent of the females.

Residency and Career Plans

A majority of the seniors who responded to the questionnaire expected to be in a residency the first year after their graduation; 84.1 percent of those reporting their plans indicated that they planned to be in a categorical residency. When asked how many years of residency they planned to take, the largest number of those responding to the question (40.5 percent) indicated three years. Approximately 1 percent indicated that they would not be doing a residency during the first year after medical school graduation, and 55 respondents indicated that

they were undecided. Table 5 presents the residency choices of those 1983 graduates who indicated they were planning a categorical or Armed Forces residency.

When asked whether their graduate medical education plans included a research fellowship, 28.4 percent of those responding to the question answered affirmatively. Of those who planned a research fellowship, 12.7 percent indicated that it would be in the area of basic medical sciences, and 43.5 percent said that it would be in clinical medicine.

Most of the students, 74.1 percent of those responding to the question, indicated that they were planning to seek certification and had decided on a definite specialty; 17.7 percent of those responding to the question (19.2 percent of those who had decided to specialize) indicated that they had not yet decided on a specialty. As in previous years, internal medicine and family practice were the most frequently selected areas of specialty certification. Table 6 shows the specialization plans of the 1983 medical school graduates who had decided to specialize and had chosen an area of specialization, along with the first specialty choices of those graduates who had definitely decided to specialize but had not decided in which area to do so.

A total of 109 respondents, or 1 percent of those responding to the question, indicated that they did not plan to seek specialty certification. Another 746, or 7.1 percent of those responding to the question, indicated that they were undecided as to whether they would seek certification, and 33 failed to respond to the question.

Clinical practice was the career activity of first choice for 74.5 percent of the students who indicated a first choice, with 61.6 percent choosing private clinical practice and 12.8 percent salaried clinical practice. A total of 24.7 percent planned full-time academic careers as their first choice. Table 7 presents the career choices of the 1983 graduates.

A total of 10,439 students responded to the question "How extensively do you expect to be involved in research during your medical career?" Of the respondents, only 13.2 percent indicated that they planned to be involved either exclusively or significantly (that is, several years of their career set aside for full-time research or 25 percent or more of a continuous career devoted to research pursuits). Most (78.9 percent) indicated that they planned to be only somewhat involved (one year or less set aside for research or less than 25 percent of a continuous career) or

TABLE 5

Number and Percentage of 9,302 Responding Medical School Seniors to 1983 Questionnaire Concerning Plans To Be in First-Year Categorical or Armed Forces Residency*

Residency Choice	Students	
	No.	Percent
Anesthesiology	321	3.5
Dermatology	31	0.3
Emergency medicine	167	1.8
Family practice	1,396	15.0
Internal medicine	2,693	29.0
Neurological surgery	75	0.8
Neurology	62	0.7
Obstetrics/gynecology	704	7.6
Ophthalmology	97	1.0
Orthopedic surgery	418	4.5
Otolaryngology	140	1.5
Pathology	228	2.5
Pediatrics	932	10.0
Physical medicine/rehabilitation	53	0.6
Psychiatry	353	3.8
Radiology	277	3.0
Radiology (therapeutic)	38	0.4
Surgery	1,000	10.8
Urology	107	1.2
No area specified	210	2.3

* A total of 1,179 students either indicated other plans for their first-postgraduate year or failed to indicate their plans.

TABLE 6

Number and Percentage of 9,593 Responding Medical School Seniors Who Indicated a Desire To Specialize, by Definite or First Choice, 1983*

Specialty	Choice				Total	
	Definite		First			
	No.	Percent	No.	Percent	No.	Percent
Allergy/immunology	12	0.2	18	1.0	30	0.3
Anesthesiology	401	5.2	34	1.8	435	4.5
Critical care	21	0.3	1	0.1	22	0.2
Colon/rectal surgery	3	0.0	6	0.3	9	0.1
Dermatology	92	1.2	35	1.9	127	1.3
Emergency medicine	211	2.7	52	2.8	263	2.7
Family practice	1,368	17.7	76	4.1	1,444	15.1
Internal medicine	982	12.7	251	13.6	1,233	12.9
Cardiovascular disease	110	1.4	165	8.9	275	2.9
Critical care	10	0.1	17	0.9	27	0.3
Endocrinology/metabolism	27	0.3	47	2.5	74	0.8
Gastroenterology	47	0.6	60	3.3	107	1.1
Hematology	19	0.2	56	3.0	75	0.8
Infectious disease	25	0.3	71	3.8	96	1.0
Medical oncology	25	0.3	48	2.6	73	0.8
Nephrology	12	0.2	32	1.7	44	0.5
Pulmonary disease	9	0.1	32	1.7	41	0.4
Rheumatology	16	0.2	26	1.4	42	0.4
Neurological surgery	85	1.1	12	0.7	97	1.0
Nuclear medicine	3	0.0	3	0.2	6	0.1
Obstetrics/gynecology	524	6.8	58	3.1	582	6.1
Gynecologic oncology	22	0.3	5	0.3	27	0.3
Maternal/fetal medicine	25	0.3	21	1.1	46	0.5
Reproductive endocrinology	42	0.5	21	1.1	63	0.7
Ophthalmology	296	3.8	41	2.2	337	3.5
Orthopedic surgery	510	6.6	30	1.6	540	5.6
Otolaryngology	180	2.3	18	1.0	198	2.1
Pathology	240	3.1	12	0.7	252	2.6
Pediatrics	501	6.5	76	4.1	577	6.0
Cardiology	19	0.2	27	1.5	46	0.5
Critical care	4	0.1	17	0.9	21	0.2
Endocrinology	2	0.0	18	1.0	20	0.2
Hematology/oncology	21	0.3	26	1.4	47	0.5
Nephrology	2	0.0	7	0.4	9	0.1
Neonatal/perinatal medicine	14	0.2	28	1.5	42	0.4
Physical medicine/rehabilitation	67	0.9	6	0.3	73	0.8
Plastic surgery	92	1.2	42	2.3	134	1.4
Preventive medicine	11	0.1	7	0.4	18	0.2
Psychiatry	327	4.2	52	2.8	379	4.0
Child	60	0.8	11	0.6	71	0.7
Neurology	113	1.5	16	0.9	129	1.3
Child	10	0.1	7	0.4	17	0.2
Radiology	24	0.3	5	0.3	29	0.3
Diagnostic	406	5.2	39	2.1	445	4.6
Therapeutic	47	0.6	4	0.2	51	0.5
Surgery	427	5.5	101	5.5	528	5.5
Critical care	4	0.1	15	0.8	19	0.2
Pediatric	27	0.3	18	1.0	45	0.5
Thoracic surgery	72	0.9	45	2.4	117	1.2
Urology	138	1.8	13	0.7	151	1.6
Did not specify a specialty	42	0.5	18	1.0	60	0.6
Total†	7,747	100.0	1,846	100.0	9,593	100.0

* The first specialty choice is given for those respondents who had decided to specialize but had not determined in which specialty area to do so.

† A total of 888 students failed to indicate whether they would seek certification, were undecided, or indicated that they did not intend to seek certification. They are not included in this table.

TABLE 7

Number and Percentage of Responding Medical School Seniors Concerning Their Choices of Career Plans*

Type of Career	Choice					
	First		Second		Third	
	No.	Percent	No.	Percent	No.	Percent
Full-Time Academic Faculty Appointment						
Basic science teaching/research	118	1.1	175	1.8	123	1.3
Clinical science teaching/research	2,446	23.5	1,351	13.6	1,399	15.3
Salaried Research Scientist						
Basic medical sciences	18	0.2	78	0.8	92	1.0
Clinical sciences	47	0.5	223	2.2	227	2.5
Private Clinical Practice						
Solo	411	4.0	381	3.8	1,104	12.0
With one other physician	1,120	10.8	2,411	24.2	834	9.1
With three or more physicians	3,684	35.4	2,012	20.2	1,200	13.1
Undecided among options	1,194	11.5	512	5.1	516	5.6
Salaried Clinical Practice						
Hospital	673	6.5	1,423	14.3	1,610	17.6
Prepaid group clinic	274	2.6	985	9.9	1,253	13.7
State/federal agency	388	3.7	358	3.6	566	6.2
Administration (no practice)	26	0.3	42	0.4	246	2.7

* The number of respondents in each category was: first choice, 10,399; second choice, 9,951; third choice, 9,170.

involved in a limited way (such as occasional cooperation with clinical trials of new drugs or medical devices).

Discussion

Respondents to the 1983 AAMC graduation survey do not appear to differ in their demographic characteristics from the senior medical school population as a whole. Therefore, it can be assumed that the graduation survey data are generalizable to the entire class.

Although more than a third of the students reported some research involvement while in medical school, only 13.2 percent indicated that they planned to be exclusively or significantly involved in research after graduation, and only 25.3 percent of those indicating their career choice chose some type of research-related career as their first choice.

Among those who reported having participated in research activities while in medical school, 25.8 percent expected to be involved in research either exclusively or significantly after graduation, while 31.1 percent expected to be involved in a limited way or not at all. By contrast, only 5.4 percent of those reporting no research activity during their medical school years expected to be involved exclusively or significantly in research, while 63.2 percent of this group expected to be involved in a limited way or not at all.

The amount of instruction given in most areas of the medical school curriculum was rated on the average as slightly less than appropriate. Despite the apparently widespread perception among medical students that the curriculum is "supersaturated," the percentage of respondents judging the amount of instruction to be excessive was larger than the percentage judging it to be inadequate in only two areas: basic medical sciences and the

care of hospitalized patients. In both of these subject areas, a large majority of respondents rated the amount of instruction as simply appropriate (74 percent and 90 percent, respectively). In five of the 21 subject areas listed in the questionnaire, the majority of those giving an opinion rated the amount of instruction to be inadequate. These five areas were research techniques, preventive care, nutrition, practice management skills, and medical care cost control.

As indicated in Table 3, 22.3 percent of the graduates had medical school debts of $30,000 or more. Tuition increases and decreases in aid will continue to have an effect on the indebtedness of medical school graduates. It is expected that the average debt of medical students will continue to rise in the future.

The majority of the 1983 medical school seniors planned to be in a residency during the first year after graduation. Most graduates planned to enter private clinical practice after completing their graduate medical education.

Conclusion

The authors in this paper present descriptive information on the 1983 AAMC graduation questionnaire respondents. Because respondents did not differ significantly from medical school seniors as a group in their demographic characteristics, the data presented provide a portrait of the entire 1983 medical school graduate population.

The authors have made no attempt to provide either trend data or predictive analysis on the graduates. Information is now available on six classes of graduating seniors. Studies of changes in residency and specialty choice, indebtedness levels, and career plans are now possible. Such studies will contribute to the medical education community's understanding of how the medical school student population has changed and how it may shift in the future. More complex analyses now in progress by the AAMC under contract to the Department of Health and Human Services will make it possible to determine the effects of varying student characteristics and public policy changes (for example, implementation in 1979 of the Health Education Assistance Loan Program) on student indebtedness and career plans.

The Teaching of Liberal Arts In Internal Medicine Residency Training

Gail J. Povar, M.D., and Karla J. Keith

Abstract--Forty-four members of the Association of Program Directors in Internal Medicine and 58 members of the Society for Research and Education in Primary Care Internal Medicine completed questionnaires on the teaching of liberal arts in internal medicine residency programs and the importance of liberal arts to the practice of medicine. They rated economics of medical care and bioethics as essential to residency training. Law and organization of the health care system as well as economics and bioethics were rated as essential to medical practice. Although there was great variability in the curricula represented, over 40 percent of the respondents reported having formal lecture and/or seminar exposure to these topics in their programs. Problems encountered in implementing liberal arts programs included lack of curriculum time, limited faculty members, and a lack of interest on the part of residents. There is a need both to arrive at a consensus among residency directors and to explore means of developing interdisciplinary faculties if the liberal arts are to form an established part of internal medicine residency training.

The Association of American Medical Colleges (AAMC) in 1982 embarked on a three-year project, supported by a grant from the Henry J. Kaiser Family Foundation, to review and appraise the general professional education of the physician and college preparation for medicine. One concern of an 18-member panel established by the AAMC to undertake the study was the role in medical education of basic science as compared with other subjects. Steven Muller, president of Johns Hopkins University and the panel's chairman, was quoted as saying, "We should also pay more attention to the promotion of values and attitudes that physicians must have to withstand the stress of their own careers and to serve patients in a humane manner" (1).

In 1980 the Commission on the Humanities, in a report funded by the National Endowment for the Humanities (NEH), commented that the humanities must play a role in the education of all professionals who must "make so many crucial value decisions in a technological society" (2). Through NEH funding and the efforts of the Institute on Human Values in Medicine, the level of humanities teaching in medical schools, as described in a 1982 report of the institute, "Teaching Ethics/The Humanities and

Dr. Povar is an assistant professor and Ms. Keith is an educational coordinator in the Department of Health Care Sciences, George Washington University School of Medicine and Health Sciences, Washington, D.C. Dr. Povar is also faculty associate for the humanities and medicine, George Washington University.

Human Values in Medical Schools: A Ten-Year Overview," increased from 12 pilot programs in 1972 to course offerings in 89 of 125 medical schools as of 1980.

Despite the trend toward the inclusion of humanities in medical school training, postgraduate medical education appears to be at a different stage of development. A 1981 conference sponsored by the Society for Health and Human Values examined the issue of humanities teaching in primary care residencies, and the conferees recommended "efforts to increase the visibility of humanities teaching in primary care" (3).

The subject of humanities education in primary care residencies raises several questions. The range of disciplines in the humanities deemed important, the appropriate allocation of time to them in an already intense learning experience, and the availability of faculty members to provide the teaching all present quandaries for program administrators. Therefore, the authors undertook a survey to learn how one group of residencies was dealing with these questions. Another goal was to develop a profile of the current activity in the teaching of humanities topics in primary care medicine residencies. A final goal was to evaluate the congruence between the perceived importance of such subjects to medical practice and their inclusion in the curricula.

Any such survey is confronted with the problem of defining the term "humanities" itself. Although such disciplines as economics and political science are not generally considered to be among the classical humanities, they represent "liberal arts" not typically associated with medical education. Because these subjects were included, this study represented a review not only of humanities but also of liberal arts education within the content of primary care medicine residencies.

Method

Program directors from both "straight"* internal medicine programs and primary care internal medicine programs were mailed or given a questionnaire on 12 topics representative of a broad interpretation of the medical humanities. The topics ranged from economics and law to literature and art. Multiple choice questions and questions rated on a Likert scale dealt with characteristics of the program, feelings about the appropriateness of liberal arts, the availability of faculty resources and expertise in the liberal arts, the value of these topics to physicians in practice, and the problems encountered in trying to include them in the curricula. The questionnaires were distributed to persons attending the fall 1982 meeting of the Association of Program Directors in Internal Medicine (APDIM). They were also sent in early 1983 to program directors listed in the *1982 Directory of Primary Care Internal Medicine Training Programs*, printed and distributed by the Society for Research and Education in Primary Care Internal Medicine (SREPCIM). Questionnaires were completed and returned by 44 APDIM members, representing approximately 36 percent of the distributed questionnaires, and by 58 SREPCIM members, representing a response rate of 63 percent.

The respondents represented a range of positions affiliated with residency programs; 50.5 percent were program directors, and 11.9 percent were department chairmen. About one-third (36.3 percent) of the respondents identified their respec-

* Straight and traditional internal medicine programs in general consist of 24 months of inpatient responsibilities and 12 months of elective time in internal medicine subspecialties. Primary care residencies tend to offer greater exposure to ambulatory care and noninternal medicine subspecialties, such as orthopedics, gynecology, and psychology, over the same three-year period.

tive programs as traditional internal medicine residency programs, another third (31.4 percent) as straight internal medicine residencies with ambulatory care exposure, 22.5 percent as primary care internal medicine, and 8.8 percent as a two-track program combining primary care and traditional internal medicine; one respondent failed to answer this question.

As expected, the breakdown of program type differed between the APDIM and SREPCIM respondents; 36.8 percent of the SREPCIM respondents identified their program as a primary care residency compared with 4.5 percent of the APDIM respondents; and 61.4 percent of the APDIM respondents described their programs as traditional internal medicine residencies compared with 17.5 percent of the SREPCIM respondents. Despite the disparities in focus of the training experience, there were no significant differences between the two groups in their responses to the questionnaire. For this reason, responses for the two groups were collapsed and reported together.

Results

Respondents were asked to rate each of the 12 liberal arts topics on a Likert scale composed of ratings described as essential (must be in the curriculum), desirable (should be included if possible), nice (interesting but should not take curriculum time from other areas), or irrelevant (not helpful). The liberal arts topics were then ranked according to the modal response within each category from essential to irrelevant. The two topics rated as essential to residency training with the greatest frequency were the economics of medical care (56.9 percent) and bioethics (48 percent). The areas of law and medicine, medical sociology, and organization of the health care system were rated the most often as desirable. The remaining seven areas were rated as nice: history of medicine, medical anthropology, art and medicine, political science and medicine, literature and medicine, writing for medical writers, and philosophy of medicine.

The percentage of programs which offered some formal lecture and/or seminar exposure in each of the areas is presented in Table 1, together with the range of total program hours devoted to such teaching. Consistent with the respondents' feelings about the appropriateness of bioethics and medical economics to residency training, 83.7 percent of those who rated bioethics as essential and 75.9 percent of those who rated medical economics as essential responded that they included some formal exposure to those respective areas in their curricula. Formal exposure to health care law was included in the curriculum in 57.6 percent of the programs whose directors rated that topic as either essential or desirable, and the organization of the health care system was part of the curriculum in 46.3 percent of the programs whose directors rated that subject as essential or desirable. The pattern, however, was broken in the case of medical sociology, which was offered by only 28.2 percent of the programs whose spokesmen rated it as essential or desirable.

When asked to rate the value of the same 12 disciplines to medical practice on a scale ranging from essential to recreational, the respondents rated the following four the most frequently as essential: the economics of medical care, bioethics, law and medicine, and organization of the health care system. No other topics were deemed essential by a modal group of respondents. Not surprisingly, 93.9 percent of those who felt bioethics was essential to training and 93.1 percent of those who felt medical economics was

TABLE 1

Distribution of Formal Liberal Arts Subjects Taught in 102 Internal Medicine Residency Programs, 1982–83

Subject	Percentage of Programs Including Topic	Range of Hours Devoted to Topic Over Three Years
Economics of medical care	64.7	1 to > 100
Bioethics	61.6	1 to > 100
Law and medicine	48.0	1 to 20
Organization of health care system	42.0	1 to > 100
Medical sociology	19.8	1 to 90
Literature and medicine	19.6	1 to 36
History of medicine	8.8	1 to 50
Writing for medical writers	7.8	2 to 12
Philosophy of medicine	6.9	1 to 36
Medical anthropology	4.9	2 to 40
Art and medicine	2.9	2 to 5
Political science and medicine	2.0	1 to 40

essential responded that exposure to these areas was also essential to medical practice. However, only 63.5 percent of those who identified medical economics as essential to practice also felt that teaching in that area was essential to medical training. This same pattern of response also applied to two other subjects: law and medicine and organization of the health care system. Despite the apparent discrepancy, the majority of programs whose spokesmen identified the above four topics as essential to practice did offer some formal teaching in those areas during residency training. Of those programs whose spokesmen identified knowledge of medical economics, bioethics, law and medicine, and the organization of the health care system as essential to practice, 71.8 percent, 75 percent, 65.6 percent, and 52.5 percent, respectively, offered some formal exposure to these topics within their curricula.

The respondents of residency programs in which some formal teaching in the liberal arts occurred were asked to describe their impressions of their residents' interest in the topics covered on a scale ranging from very receptive to uninterested. There was no topic for which the modal response was "very receptive." With the exception of medical sociology, the topics in which residents were thought to be "moderately interested" were generally those rated with greatest frequency as essential or desirable by the respondents, that is, law and medicine, economics of medical care, organization of the health care system, and bioethics. The receptivity of residents to the remaining eight areas was described as "neutral."

Information was also gathered to help develop a profile and description of efforts to integrate the teaching of the medical humanities and liberal arts subjects into residency training. As noted, Table 1 shows the percentage of programs which offered some formal lecture and/or seminar exposure in each of the liberal arts areas included in the questionnaire. Of the 12 topics, those most often included in residency curricula were the economics of medical care (64.7 percent), bioethics (61.6 percent), law and medicine (48 percent), and organization of the health care system (42 percent). Yet the amount of time devoted to teaching in these areas varied from one to more than 100 hours

over the course of the three-year training program. Fewer than 20 percent of the sample programs offered formal exposure to any of the remaining eight topics.

Based on responses from the 69 programs which did offer some formal teaching in the medical humanities, it appeared that the responsibility for teaching in these areas varied greatly from program to program and was generally spread among more than one person or group. The most frequently cited teaching resource, noted by 71 percent of the respondents, was the residency program's own medical faculty, including part-time and volunteer faculty members. Some 56.5 percent of the respondents reported the use of multidisciplinary faculty members, including hospital and group practice administrators, ethicists, and faculty members in behavioral science. Moreover, 39.1 percent listed the use of guest lecturers and visiting faculty members and speakers from outside groups, such as government agencies, local medical societies, private organizations, and departments of continuing medical education. In four (5.8 percent) of the programs, the representatives noted that residents took responsibility for teaching humanities.

To assess the depth of faculty resources, the authors asked the respondents to describe the faculty members available to their programs in terms of accessibility and expertise. The respondents selected from the following descriptions: extensive (resources available for current needs and future development); sufficient (resources available for current needs but would need more for future development); insufficient (insufficient resources for current needs and future development); and unavailable (resources unavailable for current needs or future development). None of the respondents rated their program's faculty resources as extensive in any of the liberal arts areas. The respondents did rate their available resources as sufficient with greatest frequency in the area of economics (54.5 percent), bioethics (45.8 percent), law (45.4 percent), literature (36.3 percent), and organization of the health care system (51.5 percent). Faculty resources available in the remaining seven areas were described as insufficient. Another question asked the respondents to indicate whether they obtained their instructors from one or all of the following: the residency program faculty, the medical center faculty, the affiliated university faculty, or the community. It appeared that no one source was prominent in providing faculty members in the liberal arts. In fact, the residency programs appeared to have similar patterns in obtaining liberal arts instructors, with 64.6 percent drawing from their own residency program, 64.6 percent from the medical center, 60.6 percent from an affiliated university, and 53.5 percent from the community.

Lastly, the respondents were asked to identify any particular problems they had encountered in integrating topics they perceived as essential into their curricula. Fifty-six identified a total of 100 problems, which were grouped into the 11 categories that are listed in Table 2. Lack of time in the curriculum emerged as the most frequent problem, reported by 66.1 percent of these respondents. Constraints on staff time and a lack of interest on the part of residents were reported by 23.2 percent and 25 percent of the respondents, respectively. Additional problems revolved around the lack of qualified teachers, developed curriculum, funding, and proven teaching methods. Several respondents noted difficulty with motivating faculty members and accommodating the specific interests of each group of residents.

TABLE 2

Percentage of 102 Internal Medicine Residency Programs Reporting Problems in Efforts To Incorporate Liberal Arts Subjects into Curriculum, 1982–83

Problem	Programs with Problem
Lack of curriculum time	66.1
Residents' lack of interest	25.0
Lack of staff members' time	23.2
Lack of qualified teachers and/or curriculum planners	19.6
Lack of funding	12.5
Lack of resources (unspecified)	7.1
Identification of effective teaching methods	7.1
New program	5.4
No developed curriculum	5.4
Difficulty motivating faculty members	5.4
Changes in interests of each group of residents	1.8

Discussion

The results of the survey reported here showed that at least certain topics within the broad rubric of liberal arts disciplines were considered by the respondents to be both essential to medical practice generally and important for residency curricula in particular. The responses in these two areas of observation were not fully concordant. That is, substantially more respondents felt that economics and bioethics were essential to practice than considered them essential to internal medicine residency training.

Several explanations might be offered for this apparent discontinuity between belief and application in the internal medicine residencies that were studied. First, program directors may be hesitant in assigning the teaching of such topics to the residency level; medical undergraduate training may be perceived as a more appropriate focus. Second, as in undergraduate education, the pressure on curricular time in residencies is great. The respondents to this survey may have felt that, though essential to practice, the subjects simply would have to be "picked up" by residents on their own. Third, experience in teaching these topics within the context of internal medicine residencies is limited. Several published articles on family practice have described teaching efforts in ethics, for example, but overall there are few role models for teaching liberal arts in medical residencies to which current faculty members can comfortably refer (4–6). Thus, apprehension about how to go about introducing a subject area effectively may be reflected in a reluctance to consider it essential to the curriculum.

Finally, selecting from among the myriad of liberal arts subject areas may be seen as a matter of personal preference tempered by experience—hence, the possible unwillingness of residency directors to impose particular themes within the curriculum. Most likely, a combination of some or all of these factors are at work in the discordance revealed by the study data.

Another finding which raised questions was a perceived lack of interest in the liberal arts on the part of the residents themselves. At best, program faculty members considered their residents to be only moderately interested in several of the subjects. It is easy to speculate that the possibility of a lukewarm reception may have deterred some faculty members in their efforts to introduce the liberal arts into residency training. In fact, difficulty

in attracting residents to conferences on these topics was cited by Dr. Susan Day of the University of Pennsylvania at a May 1983 workshop sponsored by the Society for Research and Education in Primary Care Internal Medicine. The demands on residents' time placed by clinical tasks and by attendance at more traditionally accepted lectures may work against the success of introducing liberal arts into the program. Interest on the part of residents may, therefore, have to be enhanced by such efforts as providing a free lunch at a lecture on the liberal arts if the faculty members decide that exposure to the liberal arts, or some subset of them, is essential.

This study suggests other potential impediments to the development of liberal arts curricula in internal medicine residencies. A lack of available faculty members is one obvious problem. Although spokesmen for many of the residencies considered their resources adequate for their current effort, a vast majority were not equipped to expand. The fact that some residencies offered only one hour while others could offer over 100 hours in the same discipline suggests the possibility that many residencies might encounter difficulties were a consensus to arise favoring more rigorous and lengthy exposure to the humanities. The related issues of faculty development and funding must be dealt with if internal medicine residencies are to commit themselves to training in the medical humanities and related liberal arts subjects.

Based on the survey responses, the authors have attempted to describe the nature of training in the liberal arts in a sample of internal medicine residencies. As might have been expected, there existed ambivalence in the respondents' feelings about the importance of liberal arts and enormous variability in the teaching of these subjects in the residency programs. Yet, just as there is a push to "promote understanding of values and attitudes" at the undergraduate level, so residencies will need to place more emphasis on liberal arts subjects. The clinical intensity of the residency experience, it would seem, requires nurturing of efforts which might help residents to grapple with the value conflicts inherent in medical practice.

Internal medicine residencies, like medical schools, are faced with several challenges concerning the liberal arts. Further studies and efforts are essential to achieve a consensus among residency directors about what aspects of the liberal arts should be taught. There is need to address the question of whether those subjects considered essential to the practice of medicine, such as bioethics, economics, law and medicine, and organization of the health care system, need to be introduced into residencies. If residency directors determine that certain of these subjects need not be taught in this context, the reasons for such a decision may need to be identified. The present study revealed that even agreement among residency directors to teach liberal arts may raise new questions. The enormous variability among programs also raises issues of how much standardization of curricula can or ought to be achieved.

The liberal arts activity in some residency programs suggests that there is indeed experience upon which to draw. The sharing of curricula and syllabi among the residency programs and the development of pertinent continuing medical education programs could enhance the development of faculties to teach liberal arts. Conferences sponsored by the Society for Health and Human Values and efforts on the part of the American Board of Internal Medicine to identify and eval-

uate the humanistic attributes of candidates for certification, among other efforts, should help stimulate the development of liberal arts teaching within residencies. Residency program directors should be able to introduce the humanities and liberal arts to moderately interested residents with no more hesitation than teaching the traditional aspects of clinical medicine.

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